Amendments to the Claims:

1. (Currently Amended) A fluid pump controlling system comprising,

- a fluid pump (10) comprising a piston displaceably positioned in a cylinder, the cylinder having a piston displacement stroke and the cylinder having a stroke end, the fluid pump (10) being driven by an electric motor fed by electric voltage;

- a sensing assembly (11) to measure the behavior of the piston, and

- an electronic controller (16) to control the electric voltage, the electronic controller (16) being electrically connected to the sensing assembly (11), the electronic controller (16) being arranged to monitor the displacement of the piston within the cylinder during operation by detecting an impact signal, the impact signal being transmitted by the sensing assembly (11) upon occurrence of an impact of the piston with the stroke end, the impact signal being transmitted by the sensing assembly (11) to the electronic controller (16),

the electronic controller (16) being configured to cause a calibration impact by performing ~~perform~~ a calibration procedure comprising successively incrementing the piston displacement stroke by increasing the voltage fed to the electric motor, the voltage increment being controlled by a trigger signal until the occurrence of the calibration impact, and storing a maximum value of piston displacement corresponding to the piston displacement as far as the stroke end, wherein the calibration procedure is performed prior to operation and in response to receiving an impact signal during operation.

2. (Previously Presented) A system according to claim 1, wherein the maximum value of piston displacement corresponds to a displacement of maximum efficiency of the fluid pump (10).

3. (Previously Presented) A system according to claim 2, wherein the trigger signal is generated by the electronic controller (16) upon occurrence of a problem of the fluid pump (10).

4. (Previously Presented) A system according to claim 1, wherein the fluid pump (10) is actuated with a minimum piston displacement stroke.

5. (Previously Presented) A system according to claim 3, wherein the fluid pump (10) is

actuated upon occurrence of the trigger signal.

6. (Previously Presented) A system according to claim 5, further comprising:
a first filtering circuit (40) electrically connected to the electronic controller (16), the first filtering circuit (40) being of the high-pass type, the impact signal read by the sensing assembly (11) being filtered by the first filtering circuit (40) and being fed to the electronic controller (16).

7. (Previously Presented) A system according to claim 6, wherein the sensing assembly (11) comprises an impact sensor (35) electrically connected to the cylinder of the fluid pump (10).

8. (Previously Presented) A system according to claim 7, wherein the impact sensor (35) comprises an accelerometer fixed together with the cylinder of the fluid pump (10).

9. (Previously Presented) A system according to claim 5, wherein the sensing assembly (11) comprises a position sensor (36) of the piston displacement stroke, the position sensor (36) being electrically connected to the electronic controller (16).

10. (Previously Presented) A system according to claim 4, wherein the sensing assembly (11) comprises a second filtering circuit (42), electrically connected with an electronic controller (16), the second filtering circuit (42) being of the low pass type, the signal read by the sensing assembly (11) being filtered by the second filtering circuit (42) and being fed to the electronic controller (16), the signal read being filtered by the second filtering circuit (42) and corresponding to a signal of piston displacement within the cylinder.

11. (Previously Presented) A system according to claim 10, wherein the signal of piston displacement within the cylinder is transmitted to the electronic controller (16), the electronic controller (16) preventing the piston displacement as far as the stroke end.

12. (Currently Amended) A fluid pump (10) controlling system comprising:
- a fluid pump (10) comprising a piston displaceably positioned in a cylinder, the cylinder having a piston displacement stroke and the cylinder having a stroke end, the fluid pump (10) being driven by an electric motor fed by electric power,

- a piston-position sensing assembly (11), and

- an electronic controller (16) electrically connected to the sensing assembly (11), the electronic controller (16) monitoring the piston displacement within the cylinder during operation by detecting an impact signal, the impact signal being transmitted by the sensing assembly (11) upon occurrence of an impact of the piston with the stroke end, the impact signal being transmitted by the sensing assembly (11) to the electronic controller (16); the electronic controller (16) being configured to cause a calibration impact by performing ~~perform a~~ calibration procedure comprising successively incrementing the piston displacement stroke from a trigger signal until the occurrence of the calibration impact to store a maximum value of piston displacement, and monitoring the piston displacement within the cylinder and preventing displacement as far as the maximum value of piston displacement, wherein the calibration procedure is performed prior to operation and in response to receiving an impact signal during operation.

13. (Previously Presented) A system according to claim 12, wherein the electronic controller (16) prevents piston displacement as far as the stroke end by decrementing the level of voltage applied to the motor.

14. (Previously Presented) A system according to claim 13, further comprising: a first filtering circuit (4) electrically connected to the electronic controller (16), the first filtering circuit (40) being of the high-pass type, the impact signal read by the sensing assembly (11) being filtered by the first filtering circuit (40) and being fed to the electronic controller (16).

15. (Previously Presented) A system according to claim 14, wherein the sensing assembly (11) comprises an accelerometer fixed close to the cylinder of the pump fluid (10), the impact signal being generated by the accelerometer.

16. (Previously Presented) A system according to claim 13, wherein the sensing assembly (11) comprises a position sensor (36) to sense the piston displacement, the position sensor being electrically connected to the electronic controller (16).

17. (Previously Presented) A system according to claim 13, wherein the sensing assembly (11) comprises a second filtering circuit (42), electrically connected to the electronic controller (16), the second filtering circuit (42) being of the low pass type, the signal read by the sensing assembly (11) being filtered by the second filtering circuit (42) and being fed to the electronic controller (16), the signal read being filtered by the second filtering circuit (42) and corresponding to a signal of piston displacement within the cylinder.

18. (Currently Amended) A fluid pump controlling method, the fluid pump (10) comprising a piston displaceably positioned in a cylinder,

- the cylinder having a piston displacement stroke, and

- the cylinder having a stroke end, wherein the method comprises the steps of:

~~(a) monitoring~~ subjecting the piston stroke in the cylinder to a calibration procedure until a calibration impact is detected, wherein the calibration procedure comprises successively incrementing the piston stroke to ~~detect~~ cause the calibration ~~an~~ impact ~~thereof~~ with the stroke end, the calibration procedure further comprising:

(a~~b~~) monitoring the piston stroke for a stabilization time,

(I) incrementing the piston stroke if no impact occurs during the stabilization time and repeating the step (a~~b~~), or

(II) decrementing the piston stroke if an impact occurs during the stabilization time; and,

(b~~e~~) storing a value of the piston stroke determined in step (II)~~, and~~

~~(d) controlling~~ the piston displacement during operation by applying a maximum piston stroke length equal to the stored value.

19. (Currently Amended) A method according to claim 18, wherein, prior to the calibration procedure~~the step (a)~~, a step of incrementing the piston stroke is performed.

20. (Previously Presented) A method according to claim 19, wherein, prior to the step of incrementing the piston stroke, the fluid pump (10) is started with a minimum piston displacement stroke.

21. (Previously Presented) A method according to claim 20, wherein the step of

starting the fluid pump (10) with a minimum piston displacement stroke is carried out upon initiating the functioning of the fluid pump (10).

22. (Previously Presented) A method according to claim 21, wherein the step of starting the fluid pump (10) is carried out periodically.

23. (Previously Presented) A method according to claim 22, wherein the step of starting the fluid pump (10) is carried out upon occurrence of a failure.

24. (Previously Presented) A method according to claim 18, wherein, after the step (II), the piston stroke is operated in a constant way.

25. (Previously Presented) A method according to claim 24,wherein, after the step of operating the stroke in a constant way, storage of the value of the maximum piston displacement at the electronic controller (16) is performed.

26. (Previously Presented) A method according to claim 24, wherein, after the step of operating the stroke in a constant way, the piston stroke is monitored.

27. (Currently Amended) A fluid pump controlling method, the fluid pump (10) comprising a piston displaceably positioned in a cylinder,

- the cylinder having a piston displacement stroke and
- the cylinder having a stroke end,
- wherein the method comprises the steps of:

(a) turning on the fluid pump (10), causing the piston to displace in the cylinder;

(b) successively incrementing the piston stroke during a calibration procedure to cause ~~as far as the occurrence of~~ an impact ~~thereof~~ with the stroke end to determine and store a maximum value of piston displacement,

(c) monitoring the piston stroke for a stabilization time between the successive increments of the stroke,

(d) decrementing the piston stroke if an impact occurs during the stabilization time, and

(e) controlling the piston displacement during operation by applying a maximum

piston stroke length equal to the stored maximum value.

28. (Previously Presented) A method according to claim 27, wherein, in the step (a), the piston stroke of the fluid pump (10) is initiated with a minimum displacement stroke.

29. (Previously Presented) A method according to claim 28, wherein, after the step (d), the monitoring of the piston displacement is performed.

30. (Currently Amended) A linear compressor comprising a piston displaceably positioned in a cylinder, the cylinder having a piston displacement stroke and the cylinder having a stroke end, wherein the system comprises:

- a piston-position sensing assembly (11), and

- an electronic controller (16) electrically connected to the sensing assembly (11), the electronic controller (16) monitoring the piston displacement within the cylinder during operation by detecting an impact signal, the impact signal being transmitted by the sensing assembly (11) upon occurrence of an impact of the piston with the stroke end, the impact signal being transmitted by the sensing assembly (11) to the electronic controller (16),

the electronic controller (16) being configured to perform a calibration procedure comprising successively incrementing the piston displacement stroke ~~as far as the occurrence of the~~to cause a calibration impact to determine and store a maximum value of piston displacement, wherein the calibration procedure is performed prior to operation and in response to receiving an impact signal during operation.

31. (Previously Presented) An environment cooler comprising a control system as defined in claim 1.